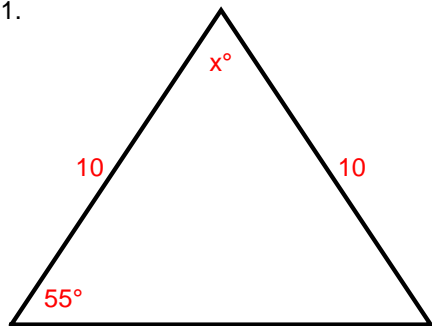


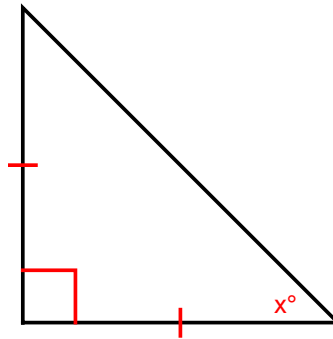
## Worksheet 5.3: The Isosceles Triangle Theorem

Find the value of  $x$ .

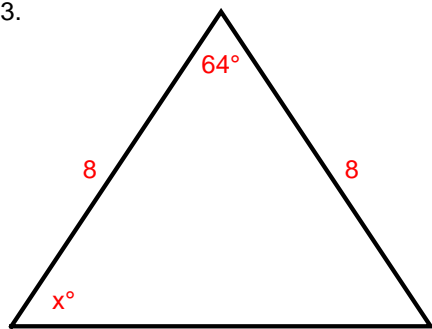
1.



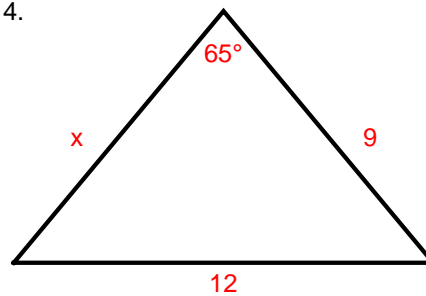
2.



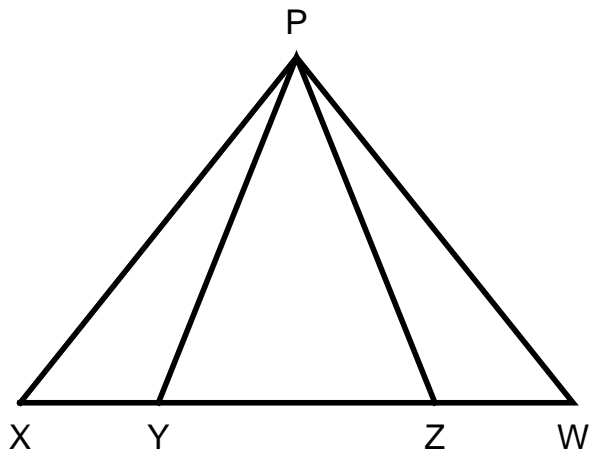
3.



4.



Use the figure below to answer questions 5 -7.

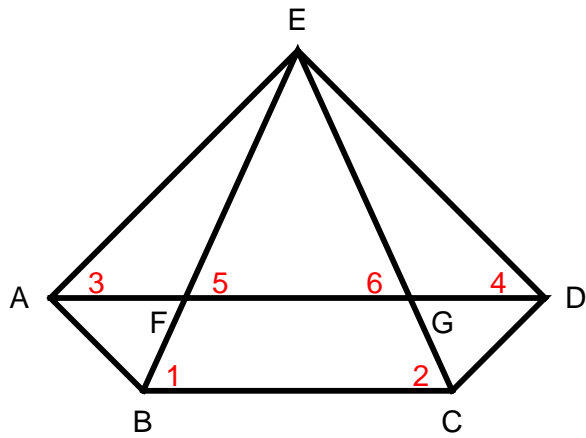


5. If  $\triangle XPW$  is isosceles, with  $\overline{XP} \cong \overline{WP}$ , name two congruent angles.

6. If  $\triangle YPZ$  is isosceles, with  $\overline{PY} \cong \overline{PZ}$ , name two congruent angles.

7. If  $\triangle XPW$  is a right triangle with right  $\angle XPW$ , what is the measure of  $\angle X$ ?

Given the two congruent angles, name two segments that must be congruent.



8.  $\angle 1$  and  $\angle 2$ .

9.  $\angle 3$  and  $\angle 4$ .

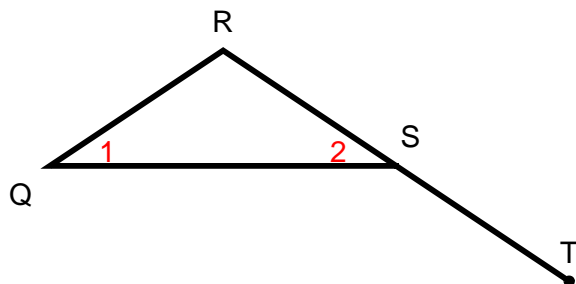
10.  $\angle 5$  and  $\angle 6$ .

11. Is the statement " $\overline{BE} \cong \overline{CE}$  if and only if  $\angle 1 \cong \angle 2$ " true or false?

Write proofs in two-column form

12. Given: M is the midpoint of  $\overline{RT}$ ;  $\angle 1 \cong \angle 2$

Prove:  $\overline{QR} \cong \overline{ST}$



13. Given:  $\overline{BA} \cong \overline{BC}$

Prove:  $\angle 1 \cong \angle 3$

